Supplementary Online Content

Lund IO, Skurtveit S, Handal M, et al. Association of constellations of parental risk with children's subsequent anxiety and depression: findings from a HUNT survey and health registry study. *JAMA Pediatr*. Published online January 7, 2019. doi:10.1001/jamapediatrics.2018.4360

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Definitions of family

Because we were interested in the associations between various constellations of parental risk factors and children's subsequent contacts with healthcare system for anxiety/depression, *family* was defined differently for the needs of Latent Profile Analysis (LPA; identification of risk constellations) and regression analyses.

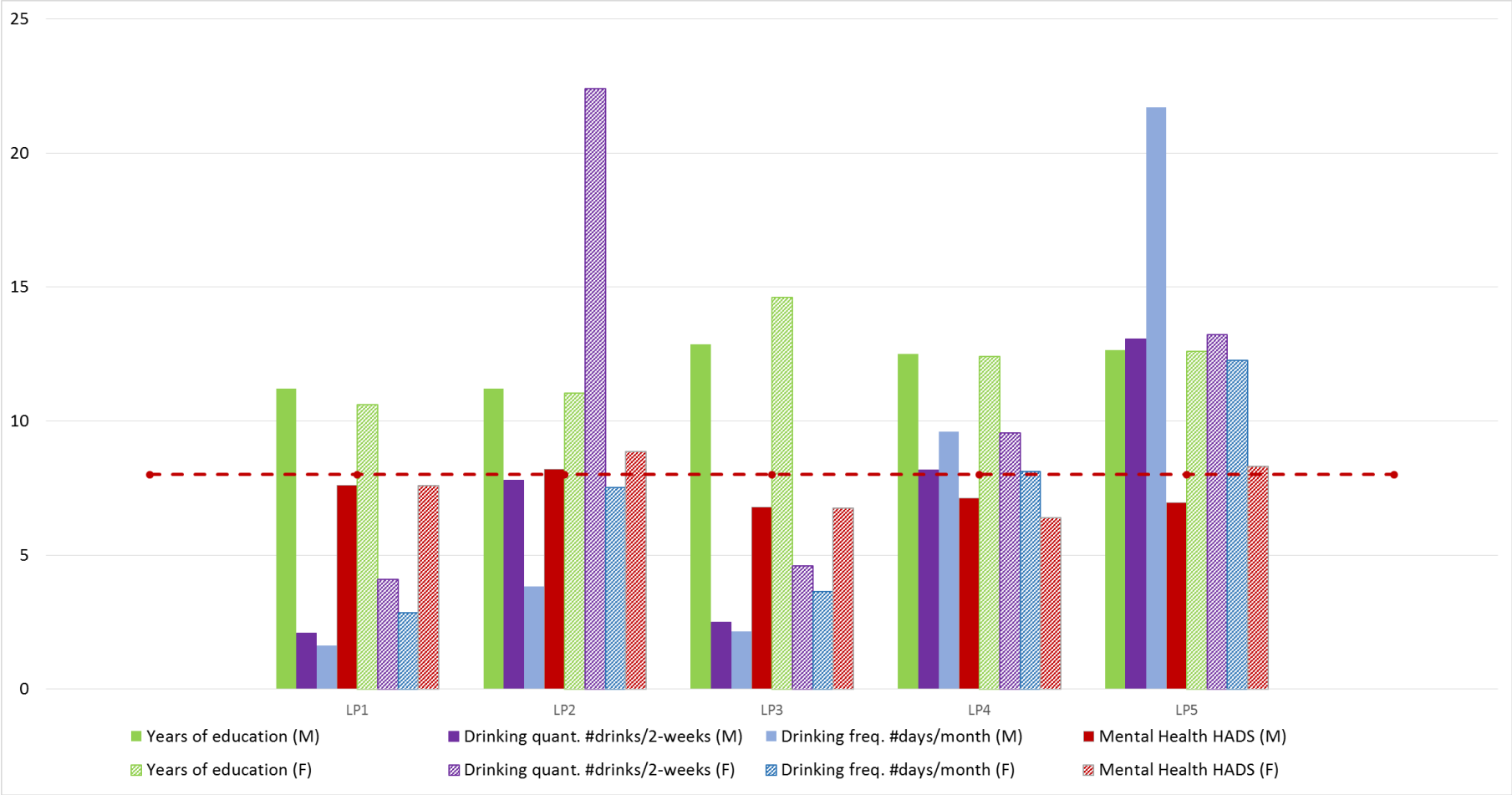
Specifically, even though each child participated *only once* in HUNT survey, some families were repeated because they had multiple children, both within and across the two utilized HUNT waves. For example, mother #1 and father #2 could have had two children participating in YOUNG-HUNT1 and another child in YOUNG-HUNT2: while the first two children would share the latent risk profile, the third child would not, because parental characteristics – i.e., education, mental health, and drinking behaviors -- could have changed in the meantime. For proper identification of parental risk exposures for *each child*, we needed to identify unique mother-father dyads at each HUNT assessment. These were utilized in our LPA classification, such that each temporally unique family was entered only once into the classification procedure. This approach precluded both the inflation (for families with multiple children within HUNT waves) and conflation of latent profiles (for families with children in both HUNT waves). Accounting for the assessment time (HUNT), and maternal and paternal id number, there was a total 7,029 temporally unique families.

However, in our Poisson regression models, we needed to account for family clustering; i.e., for children who live(d) in same families even though they may have participated in different HUNT waves and potentially had different exposures if their parental behaviors and characteristics changed over time. This is different from identifying and correctly assigning temporally unique family profiles (i.e., exposures of interest). For these regression analyses, "family" was defined as any family constellation which shared the same "mother." Consequently, our regression analyses accounted for a total of 6,696 unique family clusters and was based on clustered error variances.

eTable. Fit indices for identified latent profiles

Model	Obs.	AIC	BIC	adjBIC	Entropy
2-class solution	7,029	277,547	272,809	272,961	.99
3-class solution	7,029	269,202	269,517	269,371	.99
4-class solution	7,029	--	--	--	--
5-class solution	7,029	265,697	266,136	265,932	.97
6-class solution	7,029	264,042	264,543	264,311	.97

eFigure. Selected latent profile analysis solution and corresponding constellations of early parental risk



Note: M = Mother, F = Father, Dotted red line = HADS scale cut-off indicative of possible anxiety/depression. Y-axis represents the scores on the respective indicators; e.g., number of drinking days per month, completed years of education, etc.